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## National Animal Health Monitoring System

# National Studies

### *Why national studies?*

The Animal Industry Act of 1884 directed the Animal Health Inspection Services' (APHIS) predecessor, the Bureau of Animal Industry, to "collect such information...as shall be valuable to the agricultural and commercial interests of the country." The Bureau effected this mandate to successfully eradicate bovine contagious pleuropneumonia in the late 1800's. Hog cholera, bovine brucellosis, tuberculosis, and pseudorabies were more recent targets.

In the mid-1970's, the National Academy of Science sparked APHIS to reassess its responsibilities toward the industry's information needs in light of the modern food animal industry. U.S. agriculture was beginning to function in the context of world trade. Also, the public demanded production of wholesome, high-quality, safe, and cost-efficient products. Producers, veterinarians, academia, educators, and government policy makers alike were in need of **scientifically-sound and statistically-valid, national information** to move the industry forward. APHIS viewed the need for proactive information to become even more timely, accurate, and user-friendly in the latter quarter of the 20th century than it had been in 1884 and recognized its responsibility to collect and provide information beyond the existing level. Veterinary Services' (VS) network of federal veterinarians; their inherent knowledge, training, and locations across the U.S.; and their collaboration with State animal health officials brought the monitoring program to VS.

### *How do national studies work?*

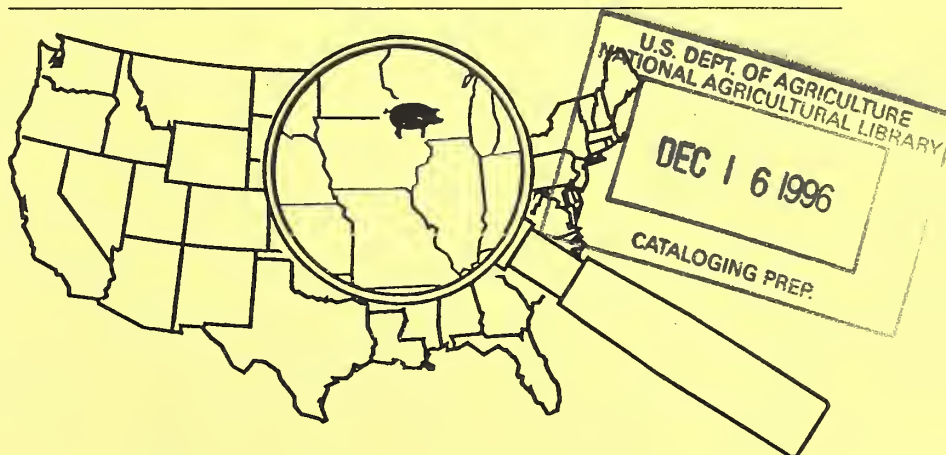
The National Animal Health Monitoring System (NAHMS) began at the first level of food production **-on the farm -** to test the theory and methods of data collection necessary for a national program.

Successes of state pilot projects in the 1980's brought encouragement, and by

1990, NAHMS was ready to begin its first attempt at describing health and production relating to a national food animal population.

From the earliest studies, program designers recognized the need for NAHMS to function unlike other VS regulatory programs in that **producer participation must be voluntary to obtain high data quality, and data from individual operations must be held confidential**. Since, reliance on a convenience sample of volunteers would not assure statistically-valid results, planners were led to the USDA:National Agricultural Statistics Service (NASS). NASS provides NAHMS with statistical knowledge of U.S. operations and food-animal populations, enabling data collectors to approach a sample of potential participants. Volunteers from this sample represent a predetermined portion of the national herds, usually above 70 percent of the targeted animal population (at both herd and individual animal levels.)

Before designing a study, NAHMS conducts a **needs assessment** of critical information gaps involving the industry and related groups. Then, an optimal study design is chosen to collect the necessary data incorporating questionnaires and biologic sample collection. NAHMS performs evaluations of biologic samples in cooperation with the USDA:National Veterinary Services Laboratories and recruited university laboratories.





<i>Date</i>	<i>Study Name</i>	<i># Producers</i>	<i>U.S. Population Represented by Core Data</i>
1989-90	National Swine Survey	1,661	95% swine
1990-91	National Dairy Heifer Evaluation Project (NDHEP)	1,811	78% milk cows/
1993-94	Cow/Calf Health & Productivity Audit (CHAPA)	2,539	100% cow/calf operations
1994-95	Cattle on Feed Evaluation (COFE)	3,214	85.8% cattle on feed
1995	Swine '95: Grower/Finisher	3,000	91% hogs
1996	Dairy '96	4,000	83% nation's milk cows

NAHMS **interprets** results in the context of the study design and other available information with input from external reviewers to provide recommendations or suggest further research needs or actions. Information is subject to outside review by subject matter specialists prior to release.

NAHMS **provides a framework for investigations** on health and management issues of local interest as well. A study of fescue in the southeast and investigation of the relationship between calf health and neospora abortion in California are examples.

## **How are national study data used?**

Study results enhance APHIS' ability to respond to disease outbreaks. NAHMS information helped policy makers dispel public condemnation of food-animal agriculture following human disease outbreaks in the early 1990's. Prevalence of Escherichia coli 0157:H7 and Cryptosporidium in dairy calves were proactively identified through the NAHMS National Dairy Heifer Evaluation Project. A few years later, more results from the same study helped officials address an outbreak of acute bovine viral diarrhea (BVD).

Beyond responding to outbreak information needs, NAHMS data continue to help policy makers and researchers address disease problems by providing scientifically-based information on management practices, animal health, and the interrelationships between these factors. The same information applies to other agricultural concerns, such as quality control, production levels, and cost efficiency.

**Benefiting education is a primary goal of the NAHMS program.** The National Cattlemen's Association and other beef-related organizations have used results of NAHMS' Beef Cow/Calf Health and Productivity Audit and Cattle on Feed Evaluation to educate producers on how changes in branding and

injection practices can help minimize financial losses. Organizations, such as the American Association of Bovine Practitioners and the National Pork Producers Council, and private businesses, such as Hoechst Roussel Agri-Vet Company and private practitioners, have distributed NAHMS materials as educational tools to members, agricultural consultants, and clients. Federal and State government supervisors in many areas distribute information to increase representatives' knowledge base to enhance services to their clients.

NAHMS provides United States' international trading partners with a clearly defined and available monitoring system to enhance global marketing efforts.

**Dissemination of NAHMS information has emerged as an exciting aspect of the program.** The NAHMS National staff begins with direct mailing of informational summaries and tabular reports to participants and identified customers throughout the industry. The identified customer base continually broadens through individual inquiries that range from general study results to questions relating to specific areas.

Popular press and scientific publications help disseminate study results and analyses to the public. Scientific and organizational meetings are a forum for discussion, in both face-to-face and printed formats. Data users, such as producer and practitioner groups and private businesses, broaden dissemination efforts through newsletters, regional or local meetings, and on-farm visits. NAHMS has recently begun working with the rapidly expanding electronic capabilities of the Internet, disseminating information through E-mail, gophers, and shared folders.

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